

Foundations of communities of practice: enablers and barriers to participation

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Foundations of Communities of Practice: enablers and barriers to participation

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Foundations of Communities of Practice: enablers and barriers to participation

Abstract

This research draws upon community of practice theory to explore the factors that enabled or hindered participation in an online 'Foundations of Communities of Practice' workshop - a course that is designed to align with Wenger's communities of practice perspective. The research used a mixed methods approach, drawing upon log-on and posting data, questionnaires and semi-structured interviews to explore participant experiences. The findings show that five dimensions either enabled or constrained participation. These were emotion, technology, connectivity, understanding norms and learning tensions. As enablers these dimensions led to successful participation within an online community of practice, but as constraints they led to peripheral participation. The findings highlight implications for tutors of such courses. These include the need to i) assess the technical expertise of participants, particularly when a number of different technological tools are used; ii) find ways to identify and evaluate emotional responses so learners can be supported in managing these; iii) ensure that participants understand the norms of a community and iv) develop clear induction materials and processes.

Keywords: learner experiences; communities of practice; Web 2.0 technologies; peripheral participation; online learning communities; Etienne Wenger; CPsquare.

Introduction

There is a strong emerging field of research and practice related to social constructivist pedagogies in technology enhanced learning environments (Laurillard, 2002; McConnell, 2005). This includes how people learn in communities of practice

(Lave and Wenger, 1991), a theoretical lens that has had a substantial impact on a number of fields, including the pedagogical design of online courses. It has led to discussion about whether communities of practice can exist in a number of different contexts, including formal and informal online learning environments (Kimble et al., 2008). Yet there are considerable ambiguities surrounding the terms community and practice (Cox, 2005), not least because communities of practice exist in a number of contexts in which a complex interplay of factors influence their development.

Communities of practice are defined as *‘a set of relations among persons, activity and world, over time and in relation with other tangential and overlapping communities of practice’* (Lave and Wenger, 1991, p. 98). This social learning theory focuses on participation in community life as a basis for learning and identity construction, with learning consisting of two fundamentally interrelated activities. The first is practice itself through the process of legitimate peripheral participation (Lave and Wenger, 1991). The second is knowledge creation, which is given more emphasis in recent work (Wenger, McDermott and Snyder, 2002).

In 1991, Lave and Wenger used the concept of a community of practice to explore situated learning within the context of a group of individuals who share their practical experience of working in a particular domain (Klein and Connell, 2008). At this time, the focus of interest was on the progress of an individual from the peripheral position of a novice to increasingly expert status. Later, Wenger defined a community of practice as *‘a group that coheres through ‘mutual engagement’ on an ‘indigenous’ (or appropriated) enterprise, and creating a common repertoire’* (Wenger, 1998, p.125-126). At this time, the negotiation of individual identity in communities of practice was central to Wenger’s thinking about communities of practice (Wenger, 1998). He argued that an individual’s identity is fluid. It is formed and re-formed

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3 throughout people's lives. Community members are constantly negotiating their
4
5 identities whether they are on the periphery, moving from the periphery towards the
6
7 core of the community, working in the centre of the community, spanning the
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9 boundaries of different communities or moving out of the community. Identity is the
10
11 result of their negotiated experience in their communities of practice as well as their
12
13 learning trajectory. Castells (1997) has argued that it is also dependent on the
14
15 discourses and practices within the contexts in which participants live, learn and
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18
19
20 work.

21
22 In later work, Wenger with McDermott and Snyder (2002) focus more on
23
24 informality, diversity and sharing knowledge. The community of practice concept
25
26 becomes viewed as a management tool through which geographically dispersed teams
27
28 and groups can be connected. This realisation led to an increased focus on virtual
29
30 communities of practice. Wenger and his colleagues therefore began to turn their
31
32 attention to the affordances of technology for supporting communities of practice,
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34 arguing that *'the web has enabled people to interact in new ways across time and*
35
36 *space and form new breeds of distributed yet interactive communities of practice'*
37
38 (Wenger et al. 2005, p.1). They recognised that the shift to increasingly virtual
39
40 communities of practice would bring challenges to some of the basic principles of
41
42 communities of practice, such as experience of 'togetherness' across time and space.
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48 This highlights a need to understand the gap between the potential of digital
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50 networks and current educational practice (Dirckink-Holmfeld et al., 2008). There has
51
52 been much focus on the importance of connection, interaction and the development of
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54 relationships in online communities (Palloff and Pratt, 1999; Garrison and Anderson,
55
56 2003; Siemens, 2004 and Downes, 2005). As participation is a key component to the
57
58 successful development of communities, this highlights the need for further empirical
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studies that explore enablers and barriers to the participation of individual participants. In this research we therefore investigate the factors that influence participation in a virtual community of practice that was designed to align with Wenger’s theoretical and pedagogical principles of communities of practice. We explore these issues within the conceptual lens of community of practice theory.

The Context

Both authors of this paper were participants in an international online workshop, run by Etienne Wenger, John Smith and Bronwyn Stuckey and bearing the title, ‘Foundations of Communities of Practice’. The workshop used a range of technologies and has run for over ten years, evolving over time in the process. It was structured to facilitate participants to develop their knowledge and understanding of communities of practice and encouraged connection and mutual support between community members. This took account of the three central characteristics of communities of practice: i) a shared domain of interest, which in the case of this online workshop was communities of practice; ii) a shared practice, which on the workshop was the focus of much activity and discussion about communities of practice known to participants and iii) a community, which for the workshop, was made up of the workshop participants, leaders and mentors (Wenger, 1998).

This workshop ran between January and March (7 weeks) in 2008. There were 26 participants, three mentors and three facilitators. The participants were made up of academics, directors of knowledge management and communications in large corporations, knowledge consultants and advisors in the voluntary sector and a platoon leader in the US army. Most had some experience of participating in communities of practice networks. There was also a mix of people from different countries including the USA, Israel, Canada, Australia, Hong Kong and the UK.

Many of the participants signed up for the workshop because they were either planning to implement or were already implementing communities of practice in their own workplaces and spheres. Mentors were past workshop participants who rejoined a succeeding workshop to support workshop leaders and participants in their learning.

Research Design

The authors concur with Hodgson and Watland (2004) who argue that the research needs to adopt methodological perspectives that can give insights and findings that are commensurate with the underlying values and beliefs of the learning environment being studied. Interpretative Phenomenological Analysis (IPA) aligns well with the community of practice lens as the focus is on anchoring interpretations in participants' accounts and enabling participants to 'tell their stories' (Smith, 2004). The authors conducted semi-structured interviews with a self-selected sample of participants, using a qualitative and largely inductive approach to explore the meanings that participants assigned to their experiences. Participants were encouraged to provide their own detailed narrative, interpreting their understanding of their experiences firstly for themselves and subsequently for the researchers (Creanor, et al., 2006). The interviews were conducted from a position of open ended and flexible enquiry, probing interesting areas that emerged and using a facilitative stance. All interviews were conducted through the means of hour-long Skype phone calls, which were recorded and transcribed. We interviewed seven participants, two mentors and two facilitators.

The authors individually analysed each interview transcription and separately gathered perceptions from the text into themes. The emergent themes became the basis for the coding scheme, which initially arose as subheadings. These included, for example, 'feelings related to participating in teleconferences', 'emotional responses to

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the learning environment and to others’ and ‘frustrations with experiences’. These themes were then grouped under much broader themes (described as superordinate or clustering themes in IPA), such as the dimension of ‘emotion’. These broader themes were then backed up by quotes from the text, thereby defining the emergent coding scheme (see figure 3 for an example of this). At the end of the first stage of analysis, we jointly explored some hidden assumptions, conflicting understandings of theory and differing judgements of what individual participants might be expressing. In line with IPA, the themes represented recurring thoughts, ideas and feelings that emerged throughout the text. This entailed balancing good phenomenological description with insightful analysis. The final stage was to construct a conceptual framework that related the themes back to theory and to the literature.

An exploratory and descriptive study of this type can also be complemented and strengthened by including a more mixed methods approach (Robson, 2002) than the label of ethnographic or IPA research alone would necessarily suggest. There is a growing consensus for the use of mixed-method approaches in researching online learning (Jones, 2004; Arbaugh and Benbunan-Fich, 2004). As Mason (1991) suggests, we can gain much useful information by counting the number of posts or the proportion of posts per participant, particularly when analysing participation levels. The authors therefore also drew on quantitative data to provide contextual information for more in-depth qualitative data. For example, participants’ log-on and posting behaviours provided data about participation levels and gave a context for later explanations from participants about their participation. We also drew upon data from a questionnaire. The questionnaire, which received a 50% response rate, elicited demographic data from participants, as well as attitudinal and qualitative feedback indicating how participants experienced the learning environment. This enabled some

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3 methodological triangulation. Using mixed methods in this way can highlight areas of
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5 tension and at times conversely strengthened the credibility of results through
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7 similarity of findings thus enabling a more all-rounded view of the phenomena
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9 (Maxwell, 1996; De Laat and Lally, 2003).
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13 Given that our research dealt with multiple realities, we recognised the
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15 importance of ensuring that the research represented those multiple constructions
16
17 adequately and that participants recognised they are valid. Respondent validation was
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19 therefore an important part of the research process and was sought by involving
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21 participants in commenting on the work at various stages. The first stage involved
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23 posting the questionnaire results to all members of the workshop and following this
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25 up with a teleconference to seek comment and feedback. This stage also involved
26
27 seeking feedback from the community leaders. At a later stage the authors reported on
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29 progress to the CPsquare community (the community which organises the workshop)
30
31 via teleconference in which the authors engaged in further dialogue about our
32
33 findings. This was complemented by online forum discussion, which took place over
34
35 a week, pursuing some of the themes raised through the teleconference. At each stage
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37 the feedback we have received has been used to further analyse our results and inform
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39 our thinking.
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45 46 Findings

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48 Our principal question was ‘What were the key barriers and enablers to
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50 participation for the participants undertaking this course?’ The first stage of the
51
52 research aimed to identify the extent to which participants actively participated in the
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54 community. This involved analysis of measurable behaviours such as numbers of
55
56 posts and individual participants’ log-on behaviours. The second stage of the research
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reports the findings from our IPA analysis of the semi-structured interviews and the qualitative comments from questionnaires.

Stage 1: participation levels

From our analysis of questionnaire data, log on and posting behaviour, we found a clear pattern that indicated that high numbers of participants logged on, but a smaller number of participants were actively engaged through posting and participating online. Of the 26 participants on the seven week online CPsquare workshop only 5 (19.2%), including the two authors, were logging in by the final week, but figures for the preceding weeks remained consistently high, with 57.7% of participants still logging in on Week 6 of the course. However, examination of activity in the workshop (Figure 1) shows much greater variability and indicates that logging in cannot be equated to online engagement. The majority of participants, although logging in, were only engaging minimally with the workshop, posting to the forums infrequently, and viewing far fewer pages than the most active participants. 76.9% of participants made less than 65 posts during the workshop compared to 243 posts made by the most active participant and 69.2% of participants viewed less than 1000 pages during the workshop, compared to 5855 viewed by the most active participant. A large number of participants could therefore be described as being on the periphery of the workshop community in terms of their actual participation levels through viewing material and posting.

Insert Figure 1 here

Responses to the questionnaire came mostly from the more active and engaged participants who completed the course. From this we could expect a positive bias in the responses to the questionnaire and this was the case. 61.6% of participants felt that the workshop helped to improve their understanding of the domain (communities of

practice) although 38.4% felt they had been unable to control the pace of learning in the workshop. In respect of sharing practice, mutual engagement and joint enterprise, 69.3% felt that they had learned as much from their peers as from the workshop leaders, 92.4% felt that learning online fosters participant interaction and collaboration and 77% felt that there were opportunities to negotiate the learning content within the community. 76.8% felt able to voice their thoughts in the workshop community and 76.9% felt they were 'listened to'.

From the questionnaire results technology did not emerge as an important issue for this group of participants. They were confident in the use of the workshop technologies (76.9%) and felt that the technologies used in the workshop enabled them to make connections with other learners (77%) and share their practice (61.5%). These data from the questionnaire revealed that the workshop was largely successful in enabling those participants who were willing and able to engage, to experience and develop an understanding of the principles of a community of practice. However, the questionnaire responses did not answer the question as to why some participants succeeded in moving along the trajectory from the periphery of the community to the core and why others remained on the periphery throughout the course. The qualitative data enabled us to explore participants' learning experiences within the workshop in greater depth in order to identify the key enablers and barriers to participation.

Stage 2: Factors that influenced participation levels

Analysis of the in-depth semi-structured Skype interviews and the qualitative comments from the questionnaires using IPA methods, revealed five dimensions, which clearly influenced participants' engagement levels and participation. These were: Emotion; Technology; Connectivity; Understanding Norms; and Learning Tensions.

Emotion

Participants found the workshop a highly emotional experience. Emotions ran particularly high at the beginning of the course before norms were understood and connections made. Six of the participants found the experience *overwhelming* at times, with these feelings being strongest in the first three weeks of the workshop. Words and phrases indicating an emotional response included the following:

fired up, daunting, frustrating, ‘roller coaster’, painful, ‘baptism by fire’, exciting, disillusioned, ‘isolated and alone’, anxious, invigorating, passion, ‘Holy cow, I’m so over my head’, ‘Oh my gosh, what have I got myself into’, terrific, disappointed, embarrassed, ‘felt bereft at end’.

Particularly strong emotional responses were elicited from learners who found the experience difficult. *‘I became so frustrated I simply stopped participating. I felt as though I were trying to stay on top of a tidal wave. The pace of discussion was too fragmented, too disjointed and there was no one person taking responsibility to focus the group. It went wherever it wanted to. I didn’t voice my thoughts as a result’* (Participant J).

Technology

Participants’ learning experiences were also affected by the mix of technologies employed, access issues, the complexity of the online environment and navigation. The workshop used a variety of different technologies, including the Webcrossing platform, discussion forums, teleconferences (Skype and phonebridge), email, wikis and instant messaging. Participants also used technologies outside the workshop when undertaking project work and taught each other how to use Facebook, PBwiki and Googledocs. The different technologies affected learning and participation in different ways, with synchronous teleconferencing discussion being

highly valued for enabling a greater sense of connection with others. *'I also liked that we had periodic teleconferencing. It's the closest we could come to a face to face and that just brings a whole new level to understanding'* (Participant S).

Participants needed a degree of technical competence to be able to use these technologies. *'I feel for beginners this was far too advanced....I think a basic technology workshop - even a couple of hours - is needed.'* (Participant J). Some participants indicated that it took three to four weeks to become comfortable with the platform. One participant had particular problems with Skype, which made it difficult to take part in teleconferences and this led to a negative learning experience. Another participant was affected by international time differences, which made it impossible for him to participate in teleconferences. These issues were noted by interviewees, but for most were not reported as having a significant impact on their learning experiences.

Some participants expressed frustration with the learning environment, describing it as outdated and complex as well as difficult to navigate. In addition, two participants expressed the view that the organisation of the workshop platform negatively affected their learning. Thus whilst advancing technologies offer learners increased choice, this can result in a level of complexity which can be particularly difficult for novice learners.

Connectivity

Participants commented in detail on the extent to which they felt connected with other participants. This notion of connectivity related to feelings of belonging to a community. Some participants felt strong connections and others felt less connected.

From the time the workshop began until it ended (and beyond) I really felt a part of a team of learners (Participant S).

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3 *Although it did not encompass the entire community, I felt part of a learning*
4 *community with a smaller subset of the community* (Participant Y).
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8 The interviews clearly revealed that there were different levels of connectivity
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10 in that people connected to the whole group, to smaller groups or to individuals.
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12 Participants talked about feeling strong connections with those they worked with
13 collaboratively. Some participants made strong connections with one other person as
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15 opposed to a group and for one participant that person was a facilitator as opposed to
16
17 a fellow participant. These strong connections were usually related to the *activity* of
18
19 the individual in that the strongest connections were all associated with project work.
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21 Given that people chose their own activities and project work, this is unsurprising as
22
23 the nature of the work draws people who have similar interests together. Some
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25 connections were strong enough to be maintained after the end of the workshop and
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27 some participants have since met face-to-face, as in the case of the authors who now
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29 also work together.
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36 *Understanding Norms*

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39 Participants had different levels of understanding of the community's cultural
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41 norms.
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43 *'I've worked online in a community like this so I felt pretty comfortable right*
44 *away'* (Participant S).
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48 *'As a newcomer to the concept of CoPs, I at first found the discussion quite*
49 *difficult to dive into as I didn't have any background context and the folks who*
50 *were most active were already involved in CoPs'* (Participant W).
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55 Some of the norms of the workshop were closely linked to familiarity with the
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57 technologies that were used for online communication, such as the norms associated
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59 with online communication and netiquette. Some people felt very confident and
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3 experienced in this and other participants described themselves as ‘newbies’.
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6 Participants needed to understand the rhythms of posting and receiving responses to
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8 their posts and how people are ‘listened’ to online. Questionnaire results revealed that
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10 the majority of participants felt that others listened to them.
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12 *Learning tensions*

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15 The questionnaire found that, in relation to learning on the workshop,
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17 satisfaction levels ranged from highly satisfied to very disappointed. Most felt they
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19 had learned something and were able to articulate this. Some recognised that it will
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21 take time to know exactly what has been learned. Our findings suggest that at any one
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23 point in their learning, learners may experience a number of different tensions, such
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25 as between theory and practice, action and reflection and novice and experienced
26
27 learners (see Figure 2). They experienced these both positively and negatively and
28
29 struggled to keep them in balance. Participants who were new to online communities
30
31 of practice were aware of the gap between themselves and those with more experience
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33 and many commented on this. Interviewees also commented most on how they tried
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35 to balance time for reflection on the course content with activity and action. Most
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37 (61.6% of questionnaire respondents) agreed that there is potential for deeply
38
39 reflective learning online, but some participants felt there was not enough time for
40
41 this. In relation to this they also discussed how they tried to keep up with the pace of
42
43 the course whilst trying to achieve some depth in their learning. These points are all
44
45 illustrated by quotes from participants according to the three dimensions of theory and
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47 practice, action and reflection and novice and experienced (see Figure 2).
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53 **Insert Figure 2 here**

54 **Discussion**

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Wenger’s 1998 work defines the critical dimensions of a community of practice as mutual engagement, joint enterprise and shared repertoires. On the workshop, mutual engagement was represented by engagement in discussion forums, collaborative work on activities and projects as well as the social relationships that developed between participants. Joint enterprise is a shared goal, which is informally negotiated between community members, who work within a social network and are mutually accountable to each other for the creation of knowledge within the community. On the workshop the shared goal was to develop knowledge and understanding about communities of practice. Shared repertoires were exemplified through project and activity outcomes and through the sharing of experience in discussion forums. Thus the workshop was designed in line with Wenger’s definition of a community of practice. Participants were asked to undertake the kind of tasks that participants in any community of practice would undertake.

However, this research found that some participants were active in becoming mutually engaged around the domain, sharing their practice and joint enterprise, thus feeling part of an effective learning community, and others were not. Our findings suggest that the reasons for this might be that active participants could cope with the technology, adapt their learning strategies to align with the learning environment, effectively manage emotion and learning tensions, make conceptual and social connections and establish an online identity.

Wenger et al. (2005) acknowledge that difficulties with technology will inhibit participation in an online community of practice. Online learners need to be able to access the learning environment through a variety of different technologies from live conferencing and chat rooms to wikis and social networks, as well as the more commonly used discussion forums. Our findings suggested that technology was not a

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2
3 defining experience for participants, but those who responded to the questionnaire and
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5 volunteered for a Skype interview, were also those who were technically proficient.
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7 Technology was already integral to their way of working. However, within the
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9 CPsquare workshop, there were a number of participants who experienced navigation
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11 and technical difficulties. Some participants were not able to access the live
12
13 conferences or did not know how to use technologies such as wikis and instant
14
15 messaging. These were the less active participants. They had difficulties navigating
16
17 and searching the virtual environment and lacked 'wayfinding' skills (Darken, 2008).
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19 Darken (2008) believes that *'current implementations of virtual worlds provide little*
20
21 *support for effective wayfinding'*. This suggests that peripheral participation in an
22
23 online community of practice may be, at least in part, a consequence of technology.
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29 Participants' experiences with the technology led to emotional responses. For
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31 some this emotion inhibited their learning as experienced by Participant J who *'felt*
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33 *frustrated and gave up'*, but others who experienced equally strong emotions, as
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35 illustrated in this quote by Participant U, *'I hated the interface with a burning*
36
37 *passion'*, managed to complete the course with high levels of engagement. Emotion is
38
39 known to be a significant aspect of the learning process (Soini and Flynn, 2005;
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41 Sharpe et al., 2005) and our research suggests that learning in an online environment
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43 can release a heightened intensity of emotion. An ability to manage emotion would
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45 therefore seem to be an important characteristic for effective online participation.
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50 Actively engaged participants also understood the implicit norms and culture
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52 of the community. These are more than the norms of the technology. In a community
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54 of practice norms are developed over time through the interactions of community
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56 members. Preece (2004) points out that a problem for newly-formed communities of
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58 practice, *'is how to identify and establish acceptable, stable norms, because without*
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3 *them empathy and trust are threatened*'. In the CPsquare workshop, the implicit
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5 norms were those of many well-established virtual communities, such as expectations
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7 of etiquette, shared practice and knowledge exchange. These norms were understood
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9 by participants with prior experience of communities of practice, but the research
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11 findings suggest that they need to be made explicit for inexperienced participants.
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15 There is evidence from our findings that those workshop participants who
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17 were able to articulate their approach to learning, e.g. *'One of the reasons we exist is*
18
19 *to learn from others'* (Participant V), and *'You get out of it what you put in – you just*
20
21 *have to be willing to ask the questions'* (Participant P) and recognised the importance
22
23 of making connections with others *'We had to get to know everyone – figure out*
24
25 *degrees of separation'* (Participant Y), were also those who were able to establish an
26
27 identity within the community, have this identity affirmed through their connectivity
28
29 and in turn influence the identity of the community. Although Wenger suggests that
30
31 the process of negotiating identity is an integral aspect of social learning, he also
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33 highlights that technology has made issues of identity more complex, which may
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35 explain why some participants remained on the periphery for the entire course.
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41 Full participation in an online community therefore requires specific learning
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43 abilities and skills, including technical skills. Within a 'real' community of practice
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45 there would be time for a learner to develop these abilities and skills and, with the
46
47 support of the community, move from the periphery to full participation. In a seven-
48
49 week workshop learners do not have this time. This was clearly recognised by the
50
51 workshop facilitators, when a workshop facilitator suggested that the workshop was a
52
53 *'Disney version, a canned version of a community of practice'*.
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57 Participants, who were actively engaged throughout the workshop, adapted
58
59 their learning strategies to align with the learning environment. In this workshop, the
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3 degree to which a learner explicitly recognised the presence of learning tensions and
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5 adapted their learning strategies to fit the learning environment affected the type of
6
7 social and conceptual connections they made. Barab, et al. (2002) suggest that
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9 tensions should be balanced not minimised. As such, a learner can expect to
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11 experience being at different points on a continuum between the two extremes of a
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13 tension at different stages in their learning journey. Some participants understood that
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15 they would experience learning tensions and expressed a greater understanding that
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17 learning is uncertain, continually changing and dynamic (Barab et al., 2002).
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19 However, even these participants had difficulties determining whether the workshop
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21 was a course or a community of practice, as illustrated by this quote from Participant
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23 Y. *Is this a course or is this a community? Am I here to form a community or get as*
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25 *much out of it as I can? I can't do both.* This raises the question of whether an
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27 academic course can make effective use of the community of practice model in its
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29 design.
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36 From our study, it is apparent that participants were implicitly, if not
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38 explicitly, aware of the tensions created by experiencing the principles of a
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40 community of practice through a structured course. The differences between
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42 communities of practice and learning communities in traditional academic courses
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44 have been considered by a number of researchers (Kimble et al., 2008). Communities
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46 of practice develop spontaneously and over time; they consist of people who share a
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48 passion about something and power relations are distributed (Anderson, 2008).
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50 Communities of practice are therefore not time-bounded, as was this workshop.
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52 Learning communities on the other hand tend to be time-bounded, have clear power
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54 relations between tutors and students, and are artificially constructed (Bitterman,
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56 2008). This has implications for the use of a 'community of practice' model for the
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design of structured learning environments. Tensions can emerge between the emergent and the designed course, between short-term participation in a course and the notion of a ‘long-term living relation’ (Lave and Wenger, 1991, p. 31) and between professional and course identities.

Polin nevertheless argues that a community of practice model can be particularly suited to students who arrive in the ‘*university classroom to acquire knowledge in one formal context in order to transfer it to another practical context at a later time*’ (Polin, 2008, p 267). This model can also be relevant for students who participate in continuous professional development courses and are involved in learning that brings them together to co-construct knowledge and to talk about shared practices in their workplaces or day-to-day life. Some studies have found evidence of mutual engagement, joint enterprise and shared repertoires in such communities (Guldborg and Pilkington, 2006; Reeves and Forde, 2004).

Nevertheless, this research suggests that learning within a virtual community of practice is likely to be more problematic for those who lack the characteristics identified by this research. It also points to some key considerations that need to be taken into account when developing online courses based on community of practice theory. Our research highlights the importance of assessing the technical expertise of participants, particularly when a number of different technological tools are used. It stresses the need to find ways of identifying and evaluating the emotional responses of participants so that they can be supported in managing their own emotional responses. It also emphasises the need have transparent discussion about the norms of a community and ensure that participants understand them. Good and clear induction materials and processes can also be crucial in enabling participation and leading to the successful development of a community of practice.

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3 The authors recognise the limitations of this research. It is an exploratory
4 study and has therefore offered insights into the experiences of some participants of
5 one particular online course. The CPsquare workshop is an innovative course. It uses
6 a range of technologies and attracts participants who are innovators themselves and is
7 therefore unlikely to be representative of participants on short online courses in
8 general. The people interviewed were an opportunistic sample and represented
9 members who were willing to give feedback on their experiences. The authors are
10 aware of the need for further examination of the experiences of participants who do
11 not take an active role in online communities but who may nevertheless be learning a
12 great deal. These initial findings nevertheless indicate the value of using an
13 interpretative phenomenological approach to understand factors that might influence
14 participation levels. Given the innovative nature of the workshop, both from a
15 pedagogical and technological perspective, we believe some important insights can
16 emerge from this.

36 Conclusions

38 The evidence from this research suggests that learner experiences in an online
39 community that is modelled on the community of practice concept are individual,
40 highly complex and context specific. The learner needs to connect with the domain,
41 community and practice through mutual engagement, joint enterprise and shared
42 repertoire (Wenger, 1998). Characteristics that appear to support participation within
43 this community are the ability to use advancing Web 2.0 technologies, to understand
44 community culture and norms, to recognise individual positions in relation to a
45 variety of learning tensions and to manage emotional responses to the learning
46 experience. When these themes are experienced by learners as enablers, connections
47 are made to the domain, the practice and to community members. When learners fail
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to understand culture, norms and learning tensions, do not have the necessary technical skills and experience negative emotion, they are unable to establish effective connections and may find themselves isolated from the community. These experiences have a profound effect on individual learners' identities and their learning experience and can have implications for how online courses adopting the communities of practice model are designed.

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Figure 1: Workshop participants' online activity over the 7 week period

Participant	No. of page views	No. of page posts	Week of last log in
A	24	1	1
C	36	0	2
B	40	2	2
D	145	2	4
G	208	2	4
E*	208	8	4
F*	326	10	4
H*	382	21	4
K	371	6	5
I	542	18	5
J*	564	20	5
L	169	6	6
Q	498	16	6
M	535	19	6
O	596	18	6
R*	674	37	6
P*	938	46	6
N*	1514	61	6
S*	2228	124	6
T*	3700	147	6
U*	4470	172	6
V*	881	37	7
W*	1244	64	7
X	2110	104	7
Y*	3557	116	7
Z	5855	243	7

*Workshop participants who completed the questionnaire

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Figure 2: Participants' experiences of learning tensions on the CPsquare online workshop

	Theory and Practice	Action and Reflection	Novice and Experienced
Learning Tensions	<p>The workshop was almost a little too academic and theoretical as opposed to pragmatic. (Participant V)</p> <p>In lots of ways a lot of what we learned was the theory and I was looking for a more practical course. This reflects the literature, plenty of theory, but not a lot about practice – How do you do it? What might be the issues? How do you deal with them? (Participant U)</p>	<p>I need more reflective, processing time than the course allowed. Sometimes the various discussions happened too fast for my poor brain! (Participant Y)</p> <p>I likely needed more time to wrap my head around all the concepts. There was no control over the kind of information submitted, the level of detail, the focus of the conversations - it was in short, totally overwhelming. (Participant J)</p> <p>If things were moving too fast, then I simply asked a question that took the conversation back a step; and if they were too slow then I asked a probing question. (Participant S)</p>	<p>Seemed like everyone had a lot more experience than I do and/or talked at such a high level that I couldn't understand or wasn't interested in what they were saying. (Participant N)</p> <p>I was establishing where everyone else was in comparison to me. Was I the total newbie that didn't have a lot of the knowledge or could I share some of my experiences? (Participant P)</p> <p>There were times when I felt supported and sometimes not – you get this when there are different levels of expertise and experience. Sometime I thought 'what are they talking about?' and felt disconnected – other times I was interested in the discussion and felt connected. (Participant Y)</p>